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ABSTRACT

This study explored the relationship between educational orientation and age, sex, and academic achievement. Subjects were undergraduate and graduate education students: 46 males and 67 females. The dependent variable, andragogical-pedagogical orientation, was measured by the Student Orientation Questionnaire (Christian, 1982). This instrument, developed to measure students' preferences, attitudes, and beliefs about education, identifies a learning style responsive either to authority-oriented, formal instruction (pedagogical) or informal and collaborative instruction (andragogical). Academic achievement was determined by grade point average. Findings indicated that: (1) female students were more likely than male students to have a higher andragogical orientation; (2) no statistical relationship was found between age and educational orientation; and (3) no statistical relationship was found between academic achievement and educational orientation. The limitations of the study (homogeneous population; the possibility that somewhat different data collection procedures might influence results) are pointed out. Implications of the study are discussed and some tentative recommendations are made on instructional strategies associated with particular educational orientation. (JD)

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ANDRAGOGICAL-PEDAGOGICAL ORIENTATION AND ITS RELATIONSHIP TO SELECTED VARIABLES AMONG UNIVERSITY STUDENTS

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ANDRAGOGICAL-PEDAGOGICAL ORIENTATION AND ITS RELATIONSHIP TO SELECTED VARIABLES AMONG UNIVERSITY STUDENTS

The word andragogy was coined in Germany by Alexander Kapp to describe the educational theory of Plato (Nottingham Andragogy Group, 1983). Andragogy was introduced to the United States in 1927 by Anderson and Lindeman (1927). However, they did not develop the concept; consequently, andragogy had little impact upon American adult education until 1968. At that time Malcolm Knowles reintroduced the term to the United States. Knowles (1968, 1970, 1978), who is generally credited with popularizing andragogy in this country, defined it as "the art and science of helping adults learn" whereas pedagogy was defined as "the art and science of teaching children."

Knowles' theory is based upon four assumptions which distinguish adult learning from childhood learning, to wit: (1) as a person matures the self-concept moves from dependency toward self-direction; (2) maturity brings an accumulating reservoir of experience that becomes an increasing resource for learning; (3) as the person matures readiness to learn is increasingly oriented towards the person's social roles; and (4) as the person matures

the orientation towards learning becomes less subject-centered and increasingly problem-centered (Knowles, 1970). These assumptions are based on research and theory from adult education, progressive education, developmental psychology, and humanistic psychology.

According to Knowles, these assumptions result in significant differences between the educational designs for adults and children. An educator subscribing to a philosophy based upon pedagogy would advocate an instructional climate that was authority-oriented, formal, and competitive. The teacher would be responsible for planning, diagnosis of needs, formulation of objectives, and evaluation. Design of the instructional process would depend upon the logic of the subject matter and content units. Information would be transmitted from the instructor to the students in traditional formats (e.g., lectures).

In contrast, an instructor adhering to an andragogical philosophy would establish an institutional climate that was mutually respectful, informal, and collaborative. Planning, diagnosis of needs, formulation of objectives, and evaluation would be a mutual process between instructor and student. Design of the instructional process would be influenced by student readiness to learn and problem units. Learning would occur from experiential techniques actively involving the learner. In sum, the andragogue could more properly be viewed as a facilitator of learning rather than as a disseminator of information.

Despite initial criticism by such prominent adult educators as Cyril Houle (1972) and Jack London (1973), who questioned the theoretical status and general utility of andragogy, the term has rapidly gained popularity both within and outside of adult education environs. Andragogical approaches are commonly utilized in adult education, nursing, and social work. They have also found their way into agriculture, business, law, and religion. Early evaluations have been favorable, but these have tended to be impressionistic and subjective.

Researchers began rectifying the lack of hard data in the late 1970s and early 1980s with efforts to define, operationalize, and evaluate andragogy. Research on andragogical-pedagogical orientations of adult educators indicated that andragogy could be operationalized and that educational orientation might vary by sex, academic department, institutional setting, and professional discipline. Realizing that knowledge of adult educators' educational orientation is of limited use unless it is used in conjunction with knowledge of learners' educational orientation, researchers have begun to study student populations.

Van Allen (1982) used Hadley's (1975) Educational Orientation Questionnaire to measure student attitudes in eight North Carolina Community Colleges and discovered that full-time younger female and married students had higher andragogical orientations than other students. Grubbs (1982) studied 332 students in 20

midwestern schools of theology and also found that female and younger students were more andragogical than others. Christian (1982) sampled civilian-military students attending classes sponsored by Tinker Air Force Base and uncovered differences related to whether classes were mandatory or voluntary. He did not examine possible relationships between educational orientation and age and sex. Curiously, no researcher had examined educational orientation in terms of academic achievement even though the literature on childhood learning suggests such a link (Herman, 1967).

In short, the data on student educational orientation on the andragogical-pedagogical continuum are exploratory and suggestive rather than definitive and conclusive. Results of studies of community college students in one southern state, theology students in midwestern states, and military-civilian personnel at one air base are not necessarily valid for all students attending colleges and universities across the nation. The tentative findings of a relationship between educational orientation and such variables as age and sex are intriguing but inconclusive. Additionally, the relationship between adult educational orientation and academic achievement has not been examined at all. Simply stated, the available data do not adequately answer an important research question: Is there a relationship between educational orientation and age, sex, and academic achievement?

The intent of this study was to investigate such relationships among selected University of Wyoming education majors.

Three null hypotheses were tested:

1) There is no relationship between age and educational orientation among selected students at the University of Wyoming.

2) There is no relationship between sex and educational orientation among selected students at the University of Wyoming.

3) There is no relationship between academic achievement as measured by grade point average and educational orientation among selected undergraduates at the University of Wyoming.

Methods and Procedures

Population and Sample

The general population on which this study was based consisted of University of Wyoming graduate and undergraduate students enrolled in classes in the College of Education. The target population consisted of students in nine classes selected to ensure an adequate balance by age and sex. Eight classes were on the main campus in Laramie and one class was in Cheyenne--a distance of fifty miles from Laramie. Five graduate and four undergraduate classes were chosen to obtain a mixture of younger and older students. Since a number of education classes (e.g., elementary education) were primarily composed of females, it was considered necessary to select classes which possessed a greater balance between the sexes.

The sample, then, was composed of selected students in the target population. While this approach ruled out random selection of subjects, there was little reason to believe that significant differences existed between these and other students. In fact, seven of the nine classes surveyed were educational foundation classes typically required of education majors; hence, it is likely that these students were fairly representative of education majors in general. However, this method of selecting a sample still necessitates great caution in inferring to other populations. The results are best limited to the sample and should be viewed as only suggestive for other groups.

Instrumentation

This study explored the relationships between educational orientation and age, sex, and academic achievement. The dependent variable, andragogical- pedagogical orientation, was measured by the Student Orientation Questionnaire. This instrument was developed by Christian (1982) who adapted it from instruments developed by Hadley (1975) and Kerwin (1979, 1981). Christian developed the SOQ to measure the students' preferences, attitudes, and beliefs about education. The SOQ follows Hadley's six-dimensional design that measured: (1) the purpose of education, (2) the nature of the learner, (3) the characteristics of the learning experience, (4) management of the learning

experience, (5) evaluation, and (6) the relationship among learners and between learners and educators.

The 50 SOQ statements were scattered throughout the questionnaire in a random fashion. The Likert-type scale contains blocks for five possible responses, ranging from "almost always" to "almost never." Andragogical-oriented statements are scored from 5 for "almost always" to 1 for "almost never." Reverse order scoring is used on pedagogical-oriented statements with 1 for "almost always" to 5 for "almost never." Hence, a high score represents one that is andragogical, and a low score represents one that is pedagogical. Since there are 50 items on the questionnaire, 250 would be the highest score possible and 50 would be the lowest score possible. A score of 150 would be a median point and would be considered neutral. Scores over 150 would be considered andragogical, whereas scores under 150 would be considered pedagogical. Incomplete questionnaires were discarded since their scores would distort the overall results.

Reliability of the SOQ was determined by use of the Kuder Richardson Formula 21, which revealed a reliability coefficient of .77. Validity was determined by the jury method of validation. Thirteen prominent adult educators, including Malcolm Knowles, reviewed the questionnaire and confirmed that it possessed content validity.

Research Design

The research design chosen was that of correlation. Multiple regression techniques were employed to determine the magnitude and direction of relationships. Hierarchical multiple regression was applied based on previous research results and theory. Sex was selected as the first independent variable examined since numerous studies have found this factor related to educational orientation (Van Allen, 1982; Grubbs, 1982). Age was the second independent variable examined since several studies have found this factor related to educational orientation (Van Allen, 1982; Grubbs, 1982). Additionally, this ranking would be supported by the adult education literature. Academic achievement was third since little data support this relationship to educational orientation.

Data came from a cover sheet and from a Likert-type scale (Student Orientation Questionnaire) that was distributed to and collected from selected University of Wyoming College of Education classes during the last week in April '984. The researcher visited all classes, with one exception, and provided explanatory information. The one exception was the class in Cheyenne where the instructor distributed and collected the questionnaire after receiving instructions from the researcher. Questionnaires were completed immediately in five classes and returned to the researcher. Questionnaires in the other four classes were distributed on Tuesday and collected during the following week by

the researcher or instructor. While there is a possibility that the somewhat different data collection procedures might influence the results, such an occurrence would be unlikely. The autonomous nature of the questionnaire lessened incentives to change answers or to seek answers from other students. Furthermore, educational orientation is not a topic likely to generate much discussion and debate among most university students. Data from the SOQ were transformed into continuous scores with each subject scoring between 50 and 250.

Results

Profile of the Sample

As a framework for discussion of findings, it is important to be aware of characteristics describing the study sample. This section reports the characteristics of educational orientation score, age, sex, and grade point average.

Educational Orientation Score. The subjects' scores ranged from 128 to 208 on the Student Orientation Questionnaire that ranged from 50 to 250. The mean score was 166.9, the median score was 166.5, the modal score was 157.0, and the standard deviation was 15.1.

Age. The subjects' ages ranged from 19 to 56. The mean age was 28.2, the median age was 25.3, the modal age was 21.0, and the standard deviation was 8.7.

Sex. The subjects included 46 males and 67 females.

Grade Point Average. Since graduate and undergraduate students were evaluated by a different university grading system, only undergraduates were surveyed on this item. The 65 subjects had a mean GPA of 3.09, a median of 3.06, a modal GPA of 3.00, and a standard deviation of .473. Their GPAs ranged 1.8 to 4.0 for a range of 2.2 on a 4.0 scale.

Data from SOO

The data from applying multiple regression to the dependent variable of eductional orientation and the independent variables of sex, age, and grade point average are summarized in Table I. According to this research, the major explanatory or predictive variable of educational orientation was sex. Sex was statistically significant at the .01 level, and the R Square indicated that it accounted for .101 of the variance in the dependent variable.

Age was not statistically significant by itself and only marginally improved explanatory or predictive power when combined with sex. The combined R Square increased from .101 to .105.

GPA was not statistically significant by itself, and when combined with sex and age, it increased R Square to .128. Thus, the three independent variables of sex, age, and GPA accounted for a little less than 13 percent of the total variance. A little over 87 percent of variance is not accounted for in this research.

Testing the Hypotheses

The first hypothesis explores the relationship between educational orientation and sex. Is educational orientation related to sex? Based on evidence from the literature, such a relationship was predicted to exist. The multiple regression procedures revealed that a statistically significant relationship existed between sex and educational orientation. An R Square of .101 was found with a significance level of .01. While the study used a .05 confidence level, this finding at the .01 level was additional insurance against a Type I error. Therefore, it can be stated that a significant, positive relationship exists between sex and educational orientation. The null hypothesis is rejected. The data supported the research hypothesis that female students were more likely than male students to have a higher andragogical orientation.

The second hypothesis examines the relationship between educational orientation and age. Is age related to educational orientation? Based on evidence from the literature, such a relationship was predicted to exist. The research procedures did not reveal a statistically significant relationship between these two variables. The Simple r was only .062 with a significance level of .668. Therefore, the research hypothesis is not supported. Instead, the null hypothesis is tenable.

The final hypothesis explores the relationship between educational orientation and academic achievement as measured by grade point average. Is academic achievement related to educational orientation? The research procedures did not reveal a statistically significant relationship between these two variables. The Simple R was .257 with a significance level of .213. This result does not support the research hypothesis. Instead, the null hypothesis is tenable.

Discussion

This research supported prior findings which found females to be more andragogically oriented than males. A rising number of studies have now shown that female students from a variety of institutions and settings tend to be andragogically inclined. However, the variable of sex accounted for only around 10 percent of the total variance in this particular study. This low percentage is also consistent with previous findings. Males and females differ in their educational orientation, but their differences are not dramatic. The mean SOQ score for males was 163.0 and the mean SOQ score for females was 169.4. These differences might best be visualized on a continuum with pedagogy on one end and andragogy on the other end. Both males and females would be relatively close to the middle of the continuum with females being closer to the andragogical end.

The study did not find a relationship between age and educational orientation. This result was in conflict with two prior research efforts which found that younger students were more andragogically oriented than older students. However, the sample of University of Wyoming students did not reveal a statistically significant relationship between these two variables. In fact, the mean educational orientation score for students 24 years of age and older was 167.9. Those scores varied little from the overall mean of 166.9.

Thus, the data do not provide a clear picture of age and educational orientation. Some researchers initially believed that older students would score higher on the andragogical end of the continuum since this would be consistent with much adult education theory. When two studies discovered the opposite results, some adult educators hypothesized that these contrary findings were a result of historical and social factors. Specifically, the popularity of humanistic approaches in education and society over the last few years may have made this younger cohort of students more receptive to the humanistically based andragogy. Older students may have scored higher pedagogically because they were simply more familiar with this traditional approach. At any rate, this particular research did not find any significant difference by age.

Such a finding does not provide ultimate support for or against andragogy as a theory or method. A limitation of the ex post facto design is that it does not permit causal inferences. There are other possible explanations. For example, the older students in this study might have become more andragogical over the years, whereas the younger students may have begun with a higher andragogical orientation. The similar mean scores could be due to different factors. It is indeed possible that these younger students may have begun with higher andragogical orientations and will be even more andragogical in the future.

This study did not identify a significant relationship between academic achievement and educational orientation. One prior study on children found that self-directed students tended to be higher achievers. Since self-directedness is associated with andragogy, it seemed logical to explore a possible relationship between academic achievement and educational orientation. No such relationship was found. However, this result does not rule out academic achievement as a correlate with educational orientation. Grade point average, while commonly used as a measure of achievement, is certainly not the only measure of this variable. Other measures, such as academic honors or professional publications, might be better predictors. Time and financial constraints precluded these measures in this particular study. Additionally, students may not have been completely

accurate in recalling their GPAs. Furthermore, while the questionnaire was anonymous, it is always possible that some subjects were not totally honest in reporting their true average. Finally, graduate students were not included on this measure since their different grading system could have skewed the distribution. Hence, the respondents did not represent all students.

Study Limitations

A major limitation of any ex post facto research design is that causal inferences cannot be made. Results may be useful for explanation and prediction, but they do not demonstrate cause and effect. Females may be more andragogical than males; this information may be useful in setting policy, building a theory, or suggesting certain instructional approaches; but the researcher may not state that sex determines educational orientation. Another variable, such as social conditioning, could be the determinant.

The sampling procedure, which consisted of selecting nine University of Wyoming classes, was not a straight random selection process. Hence, one cannot reliably infer to larger populations. The results may be viewed as being true for the study group and suggestive for similar populations of university students.

The instrument used to measure educational orientation—the Student Orientation Questionnaire—may not be completely accurate in measuring this variable. Its reliability and validity have

been established, but the newness of the instrument may mean that it is not as accurate as it could be. Subject complaints that several items were vague might mean that the instrument is not very sensitive to educational orientation.

A lack of racial minorities and low-income participants may have affected the final results. The student population at the University of Wyoming is relatively homogeneous compared to institutions in other parts of the country. Differences based on race or socioeconomic status would not be easily discernible in Wyoming.

Implications and Recommendations

A variety of research and practice recommendations flow from the accumulating data base on andragogical-pedagogical orientation of adult learners. The SOQ is a new instrument, and it is likely that it could be revised and made more sensitive to educational orientation. Alternative forms of measures of this construct should be developed and different tests for reliability could be employed. These should be used in longitudinal studies to determine if educational orientation changes over time. They should also be used on divergent populations (e.g., racial and ethnic minorities, older learners such as those in Elderhostel programs, younger learners in junior and high school, international populations, persons of different socioeconomic status, credit and noncredit students, voluntary and mandatory

learners). Additionally, academic achievement might be measured by means other than GPA to determine its possible relationship to educational orientation. Other variables, such as interpersonal behaviors or learning styles, are possible topics for examination. Finally, even if educational orientation is found to vary on the basis of these and other variables, experimental research designs will be necessary to ascertain causal relationships.

The nature of this particular research design and the limitations noted previously dictate caution in making practice recommendations. However, the following practice guidelines would appear to be warranted. Instructors who work with adults should be familiar with the concept of educational orientation and the instructional strategies associated with particular orientations. Instructors should be familiar with their own educational orientation as part of their self-awareness activities and should be aware of how their personal orientation may affect their teaching. Instructors should be trained in the use of instruments, such as the SOQ, which measure educational orientation in order to adapt their teaching styles to the orientation of their groups or classes.

Instructors should consider a blend of pedagogical and andragogical techniques for many groups of learners since few, if any, groups are primarily andragogical or pedagogical. A "middle-of-the-road" approach would likely meet more needs than a

straight andragogical or pedagogical one. For example, instructors might introduce material through the lecture (pedagogical), but then have learners apply their knowledge and skills in a simulation-game (andragogical). As another example, instructors could present information in the traditional subject-centered approach (pedagogical) and then have learners apply the material in a problem-centered approach to their life situations (andragogical). The latter example could be quite useful for a class on human behavior.

Instructors should also consider somewhat more andragogical educational approaches for female students. Finally, and perhaps most importantly, instructurs should stay abreast of research development concerning educational orientation since many questions are still unanswered.

TABLE I

THE RELATIONSHIP BETWEEN EDUCATIONAL ORIENTATION AND SEX, AGE, AND GPA VARIABLES

Independent Variables	Significance of each Variable	Simple R	R Square	R Square Change	Overall F	Overall Significance
Sex	.010	.318	.101	.101	7.105	.010
Age	.668	.062	.105	.004	2.990	.038
GPA	.213	.257	.128	.023		

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